

WE CLAIM:

Sub B<sup>A</sup>  
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1. An encoder for encoding a digital signal comprising data blocks, each data block including a header containing data relating to the block and a plurality of slots; each slot having a slot header relating to the slot and a data packet; the data packets containing successive parts of information from a source; a first slot which contains a first packet containing a first part of the said information from the source also containing a reference time; and the or each subsequent slot containing a subsequent packet of the information from the said source also containing timing information defining the timing of that packet relative to the reference time the encoder comprising a clock, and means for deriving from the clock a reference time defining the time of production of the said first packet and for providing the reference time information in the said first slot and for deriving from the clock the said timing information defining the times of production of the subsequent packages and providing the timing information in the subsequent slots as the subsequent packages are produced.

2. An encoder according to claim 1, wherein the timing information comprises coarse and fine timing information.

3. An encoder according to claim 2, wherein the clock comprises an input for receiving a clock signal, a modulo n counter which counts the clock signal and divides the clock signal frequency by n to produce the fine time information and a modulo m counter which counts the frequency divided clock signal produced by the modulo n counter, to produce the coarse time information, wherein m is much greater than n.

4. An encoding according to claim 3, wherein the clock signal frequency is  $2.25n$  Mhz, where n is an integer.

5. An encoder according to claim 4, wherein the clock signal frequency is 27MHz, n is 12 and m is 65536.

6. An encoder according to claim 4, wherein the clock signal frequency is 36MHz, n is 16 and m is 65536.

7. An encoder according to claim 1, comprising a multiplexer for inserting the time information in the slots.

8. An encoder according to claim 1, further comprising means for inserting into the slot header a flag indicating whether the slot contains a said first packet.

9. An encoder according to claim 1, wherein the said dat blocks are variable length blocks.

10. An encoder according to claim 9, wherein the said slots are variable length slots.

11. An encoder according to claim 10, wherein the variable length slots comprise slots containing metadata and slots containing data described by the metadata.

12. An encoder according to claim 11, wherein a metadata slot precedes the data slots containing the data described by the metadata in the metadata slot.

13. An encoder according to claim 12, wherein the metadata slot contains metadata identifying a succeeding slot which contains a said first packet.

14. An encoder according to claim 11, wherein the variable length slots comprise a data field, a Type field containing data describing the type of data in the Data field and a Length Field defining the length of the data in the data field.

15. An SDTI system including an encoder according to claim 1.

16. A decoder for decoding a digital signal comprising data blocks, each data block including a header containing data relating to the block and a plurality of

slots; each slot having a slot header relating to the slot and a data packet; the data packets containing successive parts of information from a source; a first slot which contains a first packet containing a first part of the said information from the source also containing a reference time; and the or each subsequent slot containing a  
5 subsequent packet of the information from the said source also containing timing information defining the timing of that packet relative to the reference time the decoder comprising a clock, means for detecting the timing information of the packets, means for initially setting the clock to the said reference time on detection of the said first packet, means for comparing the clock time with the said timing information of the  
10 subsequent packets, and means for outputting the packets at the times when the timing information of the packets equals the clock time.

17. A decoder according to claim 16, wherein the timing information comprises coarse and fine timing information.

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18. A decoder according to claim 17, wherein the clock comprises an input for receiving a clock signal, a modulo n counter which counts the clock signal and divides the clock signal frequency by n to produce the fine time information and a modulo m counter which counts the frequency divided clock signal produced by the  
20 modulo n counter, to produce the coarse time information, wherein m is much greater than n.

19. A decoder according to claim 18, wherein the clock frequency is 2.25MHz, wherein n is an integer.

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20. A decoder according to claim 19, wherein the clock signal frequency is 27MHz, n is 12 and m is 65536.

21. A decoder according to claim 19, wherein the clock signal frequency is  
30 36MHz, n is 16 and m is 65536.

22. A decoder according to claim 16, for use with a signal the slot header of which contains a flag indicating whether the slot contains a said first packet, the decoder comprising a demultiplexer for separating the flag and the packet, and means responsive to the flag for setting the clock to the reference time if the flag indicates a first packet.

23. A decoder according to claim 16, wherein the outputting means comprises a FIFO buffer.

24. A transmission system in which MPEG 2 TS packets are transmitted via an SDTI system.

25. A digital signal comprising: data blocks, each data block including a header containing data relating to the block and at least one slot ; each slot having a slot header relating to the slot and a data packet; the data packets containing successive parts of information from a source; a first slot which contains a first packet containing a first part of the said information from the source also containing a reference time; and the or each subsequent slot containing a subsequent packets of the information from the said source also containing timing information defining the timing of that packet relative to the reference time.

26. A signal according to claim 25, wherein the timing information comprises coarse timing information and fine timing information.

27. A signal according to claim 26, wherein the coarse and fine timing information are represented by separate words in the slot header.

28. A signal according to claim 25, wherein the slot header includes data indicating whether or not the packet is a first packet.

29. A signal according to claim 25, wherein the slot header includes data indicating packet type.

5 30. A signal according to claim 29, wherein the data indicating packet type indicates one or both of (i) packet length; and (ii) whether the packet includes active error correction data.

10 31. A signal according to claim 30, wherein each packet includes error correction data.

32. A signal according to claim 31, wherein the slot header includes data indicating whether or not the slot contains error correction data.

15 33. A signal according to claim 32, wherein each slot contains error correction data.

34. A signal according to claim 25, wherein the slots of each block are of fixed length and have predetermined positions in the block.

20 35. A signal according to claim 25, wherein the said data blocks are variable length blocks.

25 36. A signal according to claim 35, wherein the said slots are variable length slots.

37. A signal according to claim 36, wherein the variable length slots comprise slots containing metadata and slots containing data described by the metadata.

30 38. A signal according to claim 37, wherein a metadata slot precedes the data slots containing the data described by the metadata in the metadata slot.

39. A signal according to claim 38, wherein the metadata slot contains metadata identifying a succeeding slot which contains a said first packet.

5 40. A signal according to claim 36, wherein the variable length slots comprise a data field, a Type field containing data describing the type of data in the Data field and a Length Field defining the length of the data in the data field.

10 41. A signal according to claim 25, wherein the blocks and block headers conform to SDTI.

42. A signal according to claim 35, wherein the said packets are MPEG 2 TS packets or ATM cells or Internet Protocol Packets.